{In Archive} RE: Responses to EPA Risk Assessment Comments
Paul Rosasco
to:
Dan Gravatt
04/27/2011 11:50 AM
Cc:
Rich Kapuscinski, shawn.muenks
Hide Details
From: "Paul Rosasco" <paulrosasco@emsidenver.com>
To: Dan Gravatt/R7/USEPA/US@EPA,
Cc: Rich Kapuscinski/DC/USEPA/US@EPA, <shawn.muenks@dnr.mo.gov>
History: This message has been forwarded.
Archive: This message is being viewed in an archive.

13 Attachments

EPA Appendix F #35 Offsite disposal - Add offsite receptor.docx

EPA Appendix F #36 Offsite disposal - Offsite pathways.docx

EPA Appendix F #37 Onsite Disposal - Why ignore chem.docx

EPA Appendix F #38 Onsite Disposal - Add offsite receptor.docx

EPA Appendix F #39 Onsite disposal - Offsite pathways.docx

EPA Appendix F #40 Onsite disposal - Remediation worker calcs .docx

EPA Appendix F #27 New ST Risk Section.docx EPA Appendix F #29 ROD - Add offsite receptor.docx

EPA Appendix F #30 Fugitive Dust.docx EPA Appendix F #31 ROD - Add distant receptor.docx

EPA Appendix F #32 Remediation worker calcs.docx EPA Appendix F #33 Risk Range.docx

EPA Appendix F #34 Offsite disposal - Why ignore chem.docx

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Superfund

3.0

Here are the files for the responses to the short-term risk comments

DU 01

From: Gravatt.Dan@epamail.epa.gov [mailto:Gravatt.Dan@epamail.epa.gov]
Sent: Wednesday, April 27, 2011 8:49 AM

To: paulrosasco@emsidenver.com
Cc: Kapuscinski.Rich@epamail.epa.gov; shawn.muenks@dnr.mo.gov
Subject: Re: Responses to EPA Risk Assessment Comments

Paul, the ZIP files you attached to this email were stripped out by my servers - see below. Please change the filename as recommended and resend. I don't know if Shawn or Rich had similar problems.

Thanks,
Daniel R. Gravatt, PG
US EPA Region 7 SUPR / MOKS
901 North 5th Street, Kansas City, KS 66101
Phone (913) 551-7324 Fax (913) 551-7063

-----"Paul Rosasco" <paulrosasco@emsidenver.com> wrote: -----

To: Dan Gravatt/R7/USEPA/US@EPA, "'Muenks, Shawn'" <shawn.muenks@dnr.mo.gov>, Rich Kapuscinski/DC/USEPA/US@EPA
From: "Paul Rosasco" <paulrosasco@emsidenver.com>
Date: 04/16/2011 02:52PM
Cc: "'Merrigan, Jessie'" <JMerrigan@LathropGage.com>, "'Whitby, Kathleen'" <kwhitby@spencerfane.com>, <VWarren@republicservices.com>, "'Charlotte Neitzel'" <Charlotte.Neitzel@hro.com>, "'Dan Feezor'" <dfeezor@feezorengineering.com>, "'Mike Bollenbacher'" <mikeb@auxier.com>, "'Bob Jelinek'" <bobjelinek@emsidenver.com>
Subject: Responses to EPA Risk Assessment Comments

The attached files address the following risk assessment related comments

EPA Specific Comments 24, 31, 33, 39 and 46

EPA Risk Assessment Comments 1 though 40(contained in two separate zip files sorted by long-term and short-term risk evaluations)

EPA Additional Comments 48, 49, 50 and 51

MNDR Risk Assessment Comments 118 through 138

********** ATTACHMENT NOT DELIVERED **********

This Email message contained an attachment named
EPA Appendix F Long Term Risk Comments.zip, EPA Appendix F Short-term Risk Comments.zip, MDNR Appendix F Comments.zip
which may be a computer program. This attached computer program could contain a computer virus which could cause harm to EPA's computers, network, and data. The attachment has been deleted.

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For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

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For further information, please contact the EPA Call Center at
(866) 411-4EPA (4372). The TDD number is (866) 489-4900.

********** ATTACHMENT NOT DELIVERED **********

[attachment "EPA 33 - Risks to the Public.docx" removed by Dan Gravatt/R7/USEPA/US]

[attachment "EPA 46 - Ionizing Radiation.doc" removed by Dan Gravatt/R7/USEPA/US]
[attachment "EPA 24" removed by Dan Gravatt/R7/USEPA/US]
[attachment " 31 & 39 - Long-Term Risk Calculations.doc" removed by Dan Gravatt/R7/USEPA/US]
[attachment "EPA Additional Comment #48 Screening level selection.docx" removed by Dan Gravatt/R7/USEPA/US]
[attachment "EPA Additional Comment #49 Using RESRAD for cover materials #Template.docx" removed by Dan Gravatt/R7/USEPA/US]
[attachment "EPA Additional 51 - Risk Calculations.doc" removed by Dan Gravatt/R7/USEPA/US]
[attachment "EPA Additional 50 - Risk Calculations.doc" removed by Dan Gravatt/R7/USEPA/US]

EPA Appendix F - Risk Assessment # 35

Comment:

Section 9.3.2: See Risk Assessment comment 29 above. (Comment # 29: Section 8.3.2: The list of potential receptors in this section should include an off-site (public) receptor at a nearby workplace as fugitive dusts and radon may migrate off site to these receptors.)

Discussion:

An enhanced discussion of potential receptor identification and selection has been included in each short-term risk section. The nearby worker has been specifically included in the list of hypothetical individuals identified as potential receptors. Human health risks to a hypothetical off-site resident during construction have been quantitatively evaluated and presented in the revised Appendix F.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 36

Comment:

Section 9.3.5: See Risk Assessment comments 31 and 34 above. Additional risk pathways for off-site receptors include groundwater (if excavation activities create a contaminant plume) and direct exposure to RIM which may fall from trucks during transport. These risks should be evaluated here.

(Reproduced from Comment #31: Section 8.3.5: The text here discusses the evaluation of potential risk to a "distant receptor." However, the first sentence below Table 8-4 describes the risks to a remediation worker. Also, the text in the first paragraph states that the evaluation assumes the off-site receptor is exposed to the same air concentrations as the remediation worker. This is said to be a conservative approach, which it is. EPA wonders if it would be more transparent, however, to also include an evaluation of a true "distant receptor", taking distance from the landfill into account. As it now stands, the SFS contains no such evaluation of potential off-site receptors that are not landfill workers.)

(Reproduced from Comment#34: Section 9.3: This section needs to better explain and justify the decision made here to ignore nonradiological carcinogenic risks and all noncarcinogenic risks for the off-site disposal remedy. This remedy will involve very different exposure factors and pathways than those currently existing at the site which could result in significantly different risks than those calculated in the baseline risk assessment.)

Discussion:

An enhanced discussion of potential receptor identification and selection has been included in each short-term risk section. The nearby worker has been specifically included in the list of hypothetical individuals identified as potential receptors. Human health risks to a hypothetical off-site resident during construction have been quantitatively evaluated and presented in the revised Appendix F.

Groundwater pathways were excluded from the short-term risk evaluations because groundwater transport is slow and would be regarded as a long term pathway. In addition, surface water will be actively managed during the construction, limiting (but not eliminating) its potential to create contaminant plume.

RIM will not be loaded onto trucks in loose form. It will first be placed in "Super-sacks". These sacks will be sealed and loaded onto trucks for shipment. These Super-sacks are classified as strong-tight containers for transport purposes, and no spillage is expected to occur during routine shipments.

The previous draft of the risk assessment did not include chemical risks and hazard indices because the BRA found them to be a very minor contributor to human health effects in the no-action alternative, and it was felt that the additional time and expense associated with including them would provide little information to decision makers. In response to this and other comments, chemical risks and toxic effects have been evaluated alongside the short-term radiological risks. As anticipated, the calculated risks to receptors from non-radiological constituents are a small fraction of the total calculated short-term human health risk for any alternative. Hazard indices for the three alternatives are well below 1.0.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 37

Comment:

Section 10.3: This section needs to better explain and justify the decision made here to ignore nonradiological carcinogenic risks and all noncarcinogenic risks for the off-site disposal remedy. This remedy will involve very different exposure factors and pathways than those currently existing at the site, which could result in significantly different risks than those calculated in the baseline risk assessment.

Discussion:

The previous draft of the risk assessment did not include chemical risks and hazard indices because the BRA found them to be a very minor contributor to human health effects in the no-action alternative, and it was felt that the additional time and expense associated with including them would provide little information to decision makers. In response to this and other comments, health effects from non-radiological constituents have been evaluated alongside the short-term radiological risks. As anticipated, the calculated risks to receptors from non-radiological constituents in the current draft of Appendix F are a small fraction of the total calculated short-term human health risk for any alternative. Hazard indices for the three alternatives are well below 1.0.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 38

Comment:

Section 10.3.2: See Risk Assessment comment 29 above. (Comment #29: Section 8.3.2: The list of potential receptors in this section should include an off-site (public) receptor at a nearby workplace as fugitive dusts and radon may migrate off site to these receptors.)

Discussion:

An enhanced discussion of potential receptor identification and selection has been included in each short-term risk section. The nearby worker has been specifically included in the list of hypothetical individuals identified as potential receptors. Human health risks to a hypothetical off-site resident during construction have been quantitatively evaluated and presented in the revised Appendix F.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 39

Comment:

Section 10.3.5: See Risk Assessment comments 31 and 34 above. Additional risk pathways for off-site receptors include groundwater (if excavation activities create a contaminant plume) and direct exposure to RIM which may fall from trucks during transport. These risks should be evaluated here.

(Reproduced from Comment #31: Section 8.3.5: The text here discusses the evaluation of potential risk to a "distant receptor." However, the first sentence below Table 8-4 describes the risks to a remediation worker. Also, the text in the first paragraph states that the evaluation assumes the off-site receptor is exposed to the same air concentrations as the remediation worker. This is said to be a conservative approach, which it is. EPA wonders if it would be more transparent, however, to also include an evaluation of a true "distant receptor", taking distance from the landfill into account. As it now stands, the SFS contains no such evaluation of potential off-site receptors that are not landfill workers.)

(Reproduced from Comment#34: Section 9.3: This section needs to better explain and justify the decision made here to ignore nonradiological carcinogenic risks and all noncarcinogenic risks for the off-site disposal remedy. This remedy will involve very different exposure factors and pathways than those currently existing at the site which could result in significantly different risks than those calculated in the baseline risk assessment.)

Discussion:

An enhanced discussion of potential receptor identification and selection has been included in each short-term risk section. The nearby worker has been specifically included in the list of hypothetical individuals identified as potential receptors. Human health risks to a hypothetical off-site resident during construction have been quantitatively evaluated and presented in the revised Appendix F.

Groundwater pathways were excluded from the short-term risk evaluations because groundwater transport is slow and would be regarded as a long term pathway. In addition, surface water will be actively managed during the construction, limiting (but not eliminating) its potential to create contaminant plume.

RIM will not be loaded onto trucks in loose form. It will first be placed in "Super-sacks". These sacks will be sealed and loaded onto trucks for shipment. These Super-sacks are classified as strong-tight containers for transport purposes, and no spillage is expected to occur during routine shipments.

The previous draft of the risk assessment did not include chemical risks and hazard indices because the BRA found them to be a very minor contributor to human health effects in the no-action alternative, and it was felt that the additional time and expense associated with including them would provide little information to decision makers. In response to this and other comments, chemical risks and toxic effects have been evaluated alongside the short-term radiological risks. As anticipated, the calculated risks to receptors from non-radiological constituents are a small fraction of the total calculated short-term human health risk for any alternative. Hazard indices for the three alternatives are well below 1.0.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 40

Comment:

Section 10.5: See Risk Assessment comment 32 above.

(Reproduced from Comment #32: Section 8.5: The text here notes that the remediation workers were assumed to be classified as radiation workers, and thus any potential risks were evaluated using RESRAD. It might be beneficial to also calculate potential remediation worker risk using EPA exposure parameters as was done for grounds keeping workers, in order for the reader to better understand the potential risks to remediation workers.)

Discussion:

Risks to remediation (radiation) workers during construction were evaluated using EPA's exposure parameters and presented in Section 10.3.4 of the previous draft of Appendix F. This evaluation has been expanded in the current version of Appendix F to include effects (risks and HI's) from non-radiological constituents.

Total Effective Dose Equivalents (TEDE's) to these same workers were calculated using RESRAD. Exposure parameters used in these RESRAD simulations were consistent with those used in EPA's PRG calculator.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 27

Comment:

Sections 8, 9 and 10: While Section 4 of this risk assessment describes the methodology for the long-term risk assessments presented in Sections 5, 6, and 7, there is no corresponding section describing the methodology for the short-term risk assessments in Sections 8, 9, and 10.

In addition, Section 2.11 of the SFS work plan discusses the use of Microshield for calculating exposure rates for short-term receptors; however, Microshield is not discussed or referenced anywhere in this Appendix. A section discussing short-term risk assessment methodology and incorporating the use of Microshield must be included.

Discussion:

In the previous version of this Appendix, general information about human health evaluation was repeated in the short-term risk assessments of each alternative. Appendix F is being revised and general information pertaining to short-term human health evaluations has been consolidated into a new section. This section (new Section 8) precedes the remedy-specific sections (now designated Sections 9 – 11).

Microshield was originally included in the Work Plan to evaluate external doses to remediation workers because it allows evaluation of non-standard geometries. The only RIM/receptor geometries currently selected for detailed evaluation in Appendix F are standard planar geometries, which are ideally suited for RESRAD simulations. (RESRAD was also included in the Work Plan). In addition, Microshield does not evaluate doses from inhalation or inadvertent ingestion of soil. These must be included when calculating the Total Effective Dose Equivalents (TEDEs) required for comparison to occupational dose standards. RESRAD is capable of calculating external doses from planar geometries and internal doses to receptors from inhalation and ingestion. It was used in these short-term risk assessments (with EPA exposure parameter values) to calculate the TEDE to remediation workers during construction. If Microshield were used to calculate doses from external radiation, RESRAD or an equivalent method would still have to be used to calculate the internal doses from inhalation and ingestion. Finally, using RESRAD to calculate worker doses also provided consistency with the long-term risk assessments and reduced the number of models used in these evaluations.

Proposed Text Change:

The proposed text changes have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 29

Comment:

Section 8.3.2: The list of potential receptors in this section should include an off-site (public) receptor at a nearby workplace as fugitive dusts and radon may migrate off site to these receptors.

Discussion:

An enhanced discussion of potential receptor identification and selection has been included in each short-term risk section. The nearby worker has been specifically included in the list of hypothetical individuals identified as potential receptors. Human health risks to a hypothetical off-site resident during construction have been quantitatively evaluated and presented in the revised Appendix F.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 30

Comment:

Section 8.3.5: The last paragraph on this page discusses risks to the remediation worker from inhalation. The SFS should clarify why EPA guidance for inhalation of fugitive dust (EPA, 2000), including the use of the default PEF value, was not used here.

Discussion:

The cited text was offered to demonstrate that risks from airborne exposures to all receptors (including off-site receptors) were acceptable because inhalation risks to the RME receptor were acceptable. This screening approach has been removed from Appendix F and replaced with an alternate approach as requested by EPA reviewers.

Risks to a hypothetical receptor at the site boundary have been reevaluated by estimating air concentrations at the boundary and evaluating the risks to the target receptor from those concentrations. An enhanced discussion of soil-to-air suspension factors found in the literature has been added to Appendix F, along with the reason for selecting the value used in to calculate boundary air concentrations has been added to Appendix F. As part of that discussion, EPA's Particle Emission Factor (PEF) has been introduced as a means to estimate the amount of suspended material that is available for respiration.

Proposed Text Change:

The revised approach used to calculate risks to a boundary receptor from emissions associated with construction activities has been added to the short-term risk evaluation for each alternative. Short-term risks in Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 31

Comment:

Section 8.3.5: The text here discusses the evaluation of potential risk to a "distant receptor." However, the first sentence below Table 8-4 describes the risks to a remediation worker.

Also, the text in the first paragraph states that the evaluation assumes the off-site receptor is exposed to the same air concentrations as the remediation worker. This is said to be a conservative approach, which it is. EPA wonders if it would be more transparent, however, to also include an evaluation of a true "distant receptor", taking distance from the landfill into account. As it now stands, the SFS contains no such evaluation of potential off-site receptors that are not landfill workers.

Discussion:

The cited text was offered to demonstrate that risks from airborne exposures to all receptors (including off-site receptors) were acceptable because inhalation risks to the RME receptor were acceptable. This screening approach has been removed from Appendix F and replaced with an alternate approach as requested by EPA reviewers.

Risks to a hypothetical receptor at the site boundary have been reevaluated by estimating air concentrations at the boundary and evaluating the risks to the target receptor from those concentrations. The evaluation includes effects from non-radioactive constituents and the inhalation and submersion exposure routes are considered in this updated quantitative evaluation.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 32

Comment:

Section 8.5: The text here notes that the remediation workers were assumed to be classified as radiation workers, and thus any potential risks were evaluated using RESRAD. It might be beneficial to also calculate potential remediation worker risk using EPA exposure parameters as was done for grounds keeping workers, in order for the reader to better understand the potential risks to remediation workers.

Discussion:

Risks to remediation (radiation) workers during construction were evaluated using EPA's exposure parameters and presented in Section 8.3.4 of the previous draft of Appendix F. This evaluation has been expanded in the current version of Appendix F to include effects (risks and HI's) from non-radiological constituents.

Doses to these same workers were also calculated using RESRAD. Exposure parameters used in these RESRAD simulations were consistent with those used in EPA's PRG calculator.

Proposed Text Change:

The proposed changes to the risk assessment text and tables have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.

EPA Appendix F - Risk Assessment # 33

Comment:

Section 8.6: In the second paragraph, the excess cancer risk to the radiation surveyor of $2.7 * 10^{-4}$ is stated to be "below the target risk range of 10^{-6} to 10^{-4}" when in fact it is above this target risk range. This should be corrected.

Discussion:

The text is incorrect as stated and will be modified in response to this comment. However, on December 15, 1989, EPA published 40 CFR Part 61 (NESHAPS) in Volume 54, Number 240 of the Federal Register. In the preamble to those Standards [see VI(L)3. On page 51682], EPA discussed risks from uranium mill tailings impoundments and concluded that:

> *"...the maximum individual risk of 3×10^{-4} is essentially equivalent to the presumptively safe level of approximately 10^{-4}."*

Thus while 2.7×10^{-4} is not below the stated risk range it is essentially equivalent to EPA's presumptively sale level of 10^{-4}.

Proposed Text Change:

The comparisons of the calculated risks to remediation workers and the target risk range of 10^{-6} to 10^{-4} have been removed from the individual short-term risk assessment sections. A new Section 12 contains a tabular summary of all risk assessment results. Before final publication this will be updated with the final risk information and the information for each alternative will be compared to the other alternatives, to appropriate risk benchmarks, and to background levels of risk.

EPA Appendix F - Risk Assessment # 34

Comment:

Section 9.3: This section needs to better explain and justify the decision made here to ignore nonradiological carcinogenic risks and all noncarcinogenic risks for the off-site disposal remedy. This remedy will involve very different exposure factors and pathways than those currently existing at the site which could result in significantly different risks than those calculated in the baseline risk assessment.

Discussion:

The previous draft of the risk assessment did not include chemical risks and hazard indices because the BRA found them to be a very minor contributor to human health effects in the no-action alternative, and it was felt that the additional time and expense associated with including them would provide little information to decision makers. In response to this and other comments, health effects from nonradiological constituents have been evaluated alongside the short-term radiological risks. As anticipated, the calculated risks to receptors from non-radiological constituents are a small fraction of the total calculated short-term human health risk for any alternative. Hazard indices for the three alternatives are well below 1.0.

Proposed Text Change:

Chemical effects to short-term receptors have been incorporated into the current draft of Appendix F. Sections 9-12 of Appendix F are currently being revised as updated information on schedules, material handling processes and transportation requirements become available.